

# Microbiology, Infection and Immunology

<b>Year and Campus:</b>	2012																		
<b>Coordinator:</b>	Mrs Sandra Uren Department of Microbiology and Immunology																		
<b>Contact:</b>	Email: <a href="mailto:sandraju@unimelb.edu.au">sandraju@unimelb.edu.au</a> (mailto:sandraju@unimelb.edu.au)																		
<b>Overview:</b>	This major provides students with an understanding of Microbiology, the study of bacteria, viruses, fungi and parasites and Immunology, the study of our immune system which has evolved to control harmful microbes, but which itself can cause damage. It describes how these disciplines are studied and their application to a range of areas in biomedicine. The major opens up careers in infectious disease, diagnostics, molecular biology, biotechnology, vaccinology, biosafety and regulation and post graduate research into infectious agents, their genes and mechanisms of disease together with the various aspects, beneficial and harmful, of the immune system. It provides a basis for further study into medicine and other paramedical disciplines.																		
<b>Objectives:</b>	<p>On completion of this major, students should be able to:</p> <ul style="list-style-type: none"> <li># describe the diverse range of microbes (bacteria, viruses, fungi and parasites), and the ways in which they interact with their hosts, the environment and each other</li> <li># explain the molecular basis of the ability of various microorganisms to cause disease, together with strategies to interrupt this process, including the development of new antibiotics and other agents.</li> <li># explain the fundamental concepts of bacterial cell division, cell growth and the transfer of molecules and signals across the cell membrane</li> <li># describe the way the immune system responds to defend the body against agents of infection</li> <li># describe the mechanisms operating in response to tumours, transplants, and in allergies and autoimmune diseases.</li> <li># explain strategies to both restrict and boost the immune response by the development of novel vaccines and other interventions.</li> <li># describe the principles and procedures involved in the identification and characterisation of bacteria and viruses</li> <li># describe the use of molecular techniques to identify and characterise determinants associated with disease</li> <li># describe the principles and procedures involved in isolating and characterising immune cells and their products</li> <li># communicate scientific ideas and findings effectively in both oral and written form.</li> </ul>																		
<b>Structure &amp; Available Subjects:</b>	Completion of 50 points of study at Level 3.																		
<b>Subject Options:</b>	<p>Please note: a core subject within this major (MIIM30013 Techniques in Microbiology &amp; Immunology) is quota-restricted.</p> <p>All three of</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MIIM30011 Medical Microbiology: Bacteriology</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>MIIM30002 Principles of Immunology</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>MIIM30013 Techniques in Microbiology &amp; Immunology</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table> <p>Plus one elective selected from</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MIIM30014 Medical Microbiology: Virology</td> <td>Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	MIIM30011 Medical Microbiology: Bacteriology	Semester 1	12.50	MIIM30002 Principles of Immunology	Semester 1	12.50	MIIM30013 Techniques in Microbiology & Immunology	Semester 1, Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:	MIIM30014 Medical Microbiology: Virology	Semester 2	12.50
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	MIIM30003 Medical and Applied Immunology	Semester 2	12.50
<b>Notes:</b>	<p>This major is available to new generation Bachelor of Science students (B-SCI) and Bachelor of Biomedicine students. It is also available to Bachelor of Science students who commenced prior to 2008. The published structure of this major includes subjects available in the current year. Pre-2008 Bachelor of Science students who completed one or more Level 3 science subjects towards this major prior to 2010 should contact the EPSC for advice on appropriate subjects to complete this major.</p>		
<b>Related Course(s):</b>	<p>Bachelor of Arts and Bachelor of Science          Bachelor of Arts and Sciences          Bachelor of Biomedicine          Bachelor of Commerce and Bachelor of Science          Bachelor of Science          Bachelor of Science          Bachelor of Science and Bachelor of Information Systems</p>		